UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF WISCONSIN

PATRIOT UNIVERSAL HOLDINGS, LLC, et al.,

Plaintiffs,

v. Case No. 10-C-355

FORMAX, INC., et al.,

Defendants.

DECISION ON CLAIM CONSTRUCTION

In this lawsuit, Plaintiffs accuse the Defendants' food patty molding machines of infringing several patents. The parties appeared for a *Markman* hearing on June 1, 2011. What follows is this Court's construction of the claims at issue.

I. Background

The inventions at issue in this case involve food patty molding machines, which are machines that take food, such as ground beef, and mold it into patties for mass production. Generally, the patents at issue here relate to machines that use a servo device to control the movement of several components of the machine. As contrasted with a purely mechanical system, a servo-controlled system receives feedback from the machine itself and, through a computer, can control various mechanisms and position components as needed. The end result is a machine that operates faster and more efficiently.

The machines have a number of components. In general, bulk food product is added to the machine through a hopper, after which it enters a chamber. Rams push the food forward to a mold

plate. The mold plate shapes the food into patties, and a "knock-out device" pushes the patties out onto a conveyer. More specific aspects of the patents are discussed below.

In discerning the extent of a patent's scope, "the claims of a patent define the invention to which the patentee is entitled the right to exclude." *Phillips v. AWH Corp.,* 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (quoting *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc*., 381 F.3d 1111, 1115 (Fed. Cir. 2004)). The terms of a patent claim are to be given their ordinary and customary meaning to a person skilled in the art at the time of the patent application. *Id.* A "person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification." *Id.* at 1313. Thus, in construing the disputed terms the court may look to the "words of the claims themselves, the remainder of the specification, the prosecution history, and extrinsic evidence." *Id.* at 1312 (quoting *Brown v. 3M,* 265 F.3d 1349, 1352 (Fed. Cir. 2001)).

In this case, several of the asserted claims involve means-plus-function limitations. The Federal Circuit has explained the approach a court should take in construing means-plus-function elements:

> The construction of a means-plus-function limitation follows a two-step approach. First, we must identify the claimed function, staying true to the claim language and the limitations expressly recited by the claims. Once the functions performed by the claimed means are identified, we must then ascertain the corresponding structures in the written description that perform those functions. A disclosed structure is corresponding "only if the specification or the prosecution history clearly links or associates that structure to the function recited in the claim." In other words, the structure must be necessary to perform the claimed function.

Omega Engineering, Inc., v. Raytek Corp., 334 F.3d 1314, 1321 (Fed. Cir. 2003) (citations omitted); *see also Golight, Inc. v. Wal-Mart Stores, Inc.*, 355 F.3d 1327, 1333-34 (Fed. Cir. 2004).

II. The '228 and '650 Patents

Most of the claims at issue arise in the '228 and '650 patents, which originated in the same application and share a specification. These patents teach a food patty molding machine using a reciprocable mold plate and a rotary actuator drive. The patents claim a reduction of the high wear experienced by prior art machines and improved functionality through the use of encoders and servo devices.

A. "Plate Shuttle"

Claim 1 of the '228 patent describes a machine that takes food product and transfers it into a mold plate. The invention uses "a plate shuttle supporting the mold plate for movement therewith along the linear mold path." (Col. 12:20-22.) The meaning of the term "plate shuttle" is not discernable from the claim itself or plain to one skilled in the art. In fact, it is a term not used in the specification at all. Even so, both sides refer me to the specification for support of their proposed claim constructions.

All parties agree that the shuttle is a kind of "bar." The dispute is over whether the bar is mounted to the side edge of the top plate (Defendants' language) or whether it is attached to the mold plate (Plaintiffs' proposal). The Defendants look to the part of the specification describing the drive shafts, which carry the mold plate between its fill and discharge positions. "The drive shafts are of circular cross section and each linear drive shaft is mounted for sliding reciprocal motion in a shuttle bar 37 mounted to the side edge of the top plate 23." (Col. 6:13-15.) Defendants argue that the "shuttle bar" is synonymous with the "plate shuttle" described in the claim. As such, the specification makes it clear that such a bar is "mounted to the side edge of the top plate."

I am satisfied, however, that the Plaintiffs have the better argument. They argue that the

shuttle bar is not the same as the plate shuttle. The claim itself describes the plate shuttle as "supporting the mold plate for movement therewith along the linear mold path" and describes a means for "driving the plate shuttle to cycle the mold plate in said linear reciprocal path." (Col. 12: 20-24.) The only part of the invention that fits these descriptions is the "draw bar," which is described in the same part of the specification that Defendants cite. "The downstream edge of the mold plate 27 is bolted or otherwise demountably attached to the draw bar 38 to **support** the mold plate for reciprocal motion with the drive shafts." (Col. 6:16-18) (emphasis added). Thus, the draw bar described in the specification – not the shuttle bar – is what supports the mold plate and moves with it, just as the claim describes. It is attached to the mold plate and "shuttles" back and forth ("for movement therewith along the linear mold path"). In contrast, the specification teaches that the drive shafts are mounted "in" a shuttle bar and that the shuttle bars are the structure "through which the linear drive shafts reciprocate." (Col. 6:14; 7:38-39.) The shuttle bar is thus a kind of housing rather than the mechanism that supports and moves with the mold plate. As such, I am satisfied that the Plaintiffs' position that the draw bar is synonymous with the shuttle plate is correct.

B. "means for driving the plate shuttle to cycle the mold plate in said linear reciprocal path" ('228 patent, Col. 12:23-24)

This clause is also a part of Claim 1. The parties agree that this is a means-plus-function limitation with the function of "driving the plate shuttle to move the mold plate back and forth." The dispute is over the structure. Plaintiffs argue that the linear drive shafts move the plate shuttle back and forth, and the drive shafts are the only structure that is necessary to accomplish the agreed function. Defendants argue that additional structures are required: a motor, main driving shaft, stub

shafts, drive arms, or (alternatively) a servomotor, operating pinions directly moving linear racks.

Defendants find support for their proposed structure in the specification, which describes the components they cite as an "apparatus" for driving the plate shuttle. For example, the specification states that "in the presently preferred embodiment, the linear drive shafts 36 which carry the reciprocal mold plate 27 are driven by a rotary actuator 40 in a manner which provides virtually direct linear transfer of the rotary driving force from the actuator to the ends of the linear drive shafts." ('228 patent, col. 6:33-37.) The specification also describes axially aligned stub shafts connected to the ends of the driving shafts. (Col. 6:55-56.) Formax notes that without the motor and other features they cite, the mold plate would not move at all, much less in a back-and-forth fashion. During the hearing they displayed drawings showing that the drive shafts on their own would simply "hang in space" rather than drive the mold plate.

Plaintiffs counter that the drive shafts are really the only structure that accomplishes the job of moving the plate shuttle back and forth. Although it is obvious that the structure could not move the shuttle plate if there wasn't a motor, etc., that is not the "structure" that performs the task. The structure described by the Defendants merely enables the task to be performed, but it does not actually perform the task itself.

Ultimately, a claim construction like this involves informed line-drawing. In *Asyst Technologies, Inc. v. Empak, Inc.,* a case upon which both sides rely, the Federal Circuit faced similar arguments. 268 F.3d 1364, 1371 (Fed. Cir. 2001). There, the court noted that "An electrical outlet enables a toaster to work, but the outlet is not for that reason considered part of the toaster. The corresponding structure to a function set forth in a means-plus-function limitation must actually perform the recited function, not merely enable the pertinent structure to operate as intended."

Applying the law to the facts before it, the court concluded that "although line 51 enables the second microcomputer means to perform its recited functions, it does not actually perform any of those functions. The fact that a means of transferring data between the second microcomputer means and the second two-way communication means enables the claimed device to work does not mean that the communication line 51 is necessarily part of the claimed structure corresponding to one or the other of those functional limitations." *Id.*

The question thus is whether the structures proposed by the Defendants are merely "enabling" structures or whether they "actually perform the recited function," *id.,* which here is "driving the plate shuttle to move the mold plate back and forth." Clearly, the structures Defendants cite are not as far-removed from the function as an electrical outlet is to toasting bread. It is fairly easy to conclude that an electrical outlet is not part of a toaster. Although it gives life and functionality to the machine, it cannot be said to be part of that machine. Here, by contrast, the structures cited by the Defendants are instrumental in allowing the invention to function. But are they instrumental in driving the plate shuttle to move the mold plate back and forth (the specified function) or merely in allowing the machine, overall, to work as advertised?

Defendants argue that their proposed structures are in fact required because the drive shafts – the Plaintiffs' proposed structure – are merely two metal bars connected to the mold plate. As such, these shafts cannot "drive" anything on their own, and *driving* is the actual function at issue here. Passive structures might be all the structure required if the function is also passive, such as holding, supporting or receiving something. But when the actual function involves movement and action, it does not make sense to say that a bare and passive structure like a metal shaft could suffice to perform that function.

The structures that the Defendants cite actually do *drive* the plate shuttle. This is confirmed by the specification. There, the inventor describes an "improved drive apparatus" involving drive arms, and the "direct drive preferably comprises a rotary actuator." (Col. 2: 23-43.) It further describes structures of the apparatus well beyond the drive shaft itself: "The drive apparatus of the present invention provides positions between a top dead center position of the drive arms and each of the fill position and the discharge position of the mold plate in which each of the linear drive links is positioned colinearly with its respective linear drive shaft." (Col. 2:44-48.) In addition, the specification compares the various structural means for achieving the intended result. For example, it states that

> although the use of a rotary hydraulic actuator and a pair of drive arms provides a compact drive arrangement, alternative driving arrangements which completely eliminate the drive arms could also be utilized. For example, linear racks disposed parallel to and connected to the ends of the reciprocating linear driveshafts could be directly driven by servomotor operated pinions in direct engagement with the racks. It is believed, however, that such an alternate arrangement would not as efficiently utilize the available space below the plane of the mold plate, as does the presently preferred embodiment.

(Col. 2:63 - Col. 3:6) (emphasis added).

This section makes clear that the inventor believed that the "compact drive arrangement" described in the specification – involving an actuator and pair of drive arms – was the preferred structure. But the inventor then concedes that an alternate structure could involve linear racks driven by a servomotor, even though that structure might not use space as efficiently. This section thus explicitly acknowledges that it is not merely the drive shafts that drive the plate shuttle to move the mold plate back and forth – in either embodiment there is at least a servomotor or actuator (of some kind). I thus conclude that the bare structure proposed by Plaintiffs – the drive shafts – does

not suffice to perform the requisite function and does not account for the structures described in the specification as necessary to drive the plate shuttle.

I am further persuaded by the language of the claim itself. The "means for driving the plate shuttle to cycle the mold plate in said linear reciprocal path" necessarily includes more than just the drive shafts. Although the shafts are the implement that pushes the mold plate, the claim describes more than just pushing – it describes driving in a specific fashion (a linear reciprocal path) that is not accomplished merely by a drive shaft. The other structures are necessary to accomplish that end.

Finally, I note that if the structure were really as simple as the drive shafts themselves, as Plaintiffs suggest, the claim could have been written much more clearly. The inventor could simply have claimed "a drive shaft for driving the plate shuttle" instead of using a means-plus-function limitation. In sum, if the function here were less ambitious than "driving the plate shuttle to move the mold plate back and forth," I might agree with the Plaintiffs that their barebones structure would be adequate. But when the function involves *driving* the plate shuttle in a specific fashion, the drive shafts are not enough to accomplish that task. The structures proposed by the Defendants find support in the specification as part of the "drive apparatus" described therein. Accordingly, I adopt Defendants' proposed construction.

C. "means for driving the linear drive shafts to continuously cycle the mold plate in its reciprocal path"

The parties agree that the function of this means-plus-function limitation is driving the linear drive shafts to continuously move the mold plate back and forth. This claim is similar to the claim addressed immediately above, but where the prior claim was directed to driving the plate shuttle, this claim describes driving the linear drive shafts. As set forth above, the linear drive shafts

themselves are part of the structure that drives the plate shuttle. As such, Defendants argue that this means-plus-function limitation requires the same structure described in part B. In both claims, the function involves moving the mold plate back and forth. Thus, whether we are talking about a means for driving the plate shuttle or a means for driving the drive shafts, the structure should be the same.

Plaintiffs propose that the requisite structure consists merely of a rotary actuator. A rotary actuator is a mechanism for converting energy into rotary force (as with windshield wipers, for example). Plaintiffs look to parts of the specification that support their argument. For example, the specification teaches:

> the linear drive shafts 36 which carry the reciprocal mold plate 27 are driven by a rotary actuator 40 in a manner which provides virtually direct linear transfer of the rotary driving force from the actuator to the ends of the linear drive shafts, resulting in the virtual elimination of high wear lateral loads typical of prior art devices.

('650 patent, Col. 6:33-39.)

Plaintiffs argue that because the specification teaches that the linear drive shafts "are driven by a rotary actuator," that is all the structure that is required. But the section just quoted does not stop there: it provides that the drive shafts are driven by the actuator "in a manner which provides virtually direct linear transfer of the rotary driving force from the actuator to the ends of the linear drive shafts," which is key to achieving less wear due to lateral loads, one of the stated goals of the invention. Thus, the specification does not teach the use of just *any* rotary actuator, but the use of an actuator in a manner that provides direct linear transfer of the rotary driving force. It would be improper to lift the rotary actuator out of the specification while ignoring the manner in which the actuator is to be used.

The specification also explains the structure necessary to use the rotary actuator in the prescribed fashion, *i.e.*, "in a manner which provides virtually direct linear transfer of the rotary driving force from the actuator to the ends of the linear drive shafts." ('650 patent, Col. 6:33-39.) It teaches that in certain positions,

> the drive links are horizontal and each driven end 52 of a drive arm lies directly on the axis of the linear shaft 36 to which it is connected. As a result, the mold plate driving force is always imposed nearly linearly on the linear drive shafts, resulting in a very minor, if any, lateral force component tending to lift up or pull down on the drive shaft ends . . . . This arrangement causes far less wear on bearing surfaces 57 in the shuttle bars 37.

('650 patent, col. 7:30-38) (emphasis added).

Thus, the specification makes clear that a rotary actuator will not, on its own, provide direct linear transfer of the rotary driving force. It teaches the particular manner in which the actuator is used, and it also teaches the structure (here, the "drive arms," among other things) necessary for the rotary actuator to provide direct linear transfer of the rotary driving force. Elsewhere, the specification describes the use of "a rotary hydraulic actuator and a pair of drive arms [that] provides a compact drive arrangement improvement." ('650 patent, col. 2:62-63.) This is echoed in the next column, where the specification describes "a pair of drive arms, each having a drive end attached to a main driving shaft for reciprocable rotational movement therewith." (Col. 3:21-23.) Thus, the drive arms described are crucial not just for using the rotary actuator in the manner prescribed, but for achieving the "reciprocable rotational movement," *i.e.*, moving the shafts back and forth. Moving the shafts back and forth is the agreed-upon function of this means-plus-function limitation. A rotary actuator, on its own, would not be sufficient to accomplish this.

But it is not just drive arms that are essential to the structure. At the end of the paragraph

Plaintiffs rely upon, the specification provides that the actuator may be supplied by hydraulic pressure "to provide the desired reciprocating rotary motion to the main driving shaft 44." ('650 patent, col. 6:54.) Thus, the main driving shaft is also part of the structure described. That part of the specification continues: "Each end of the driving shaft 44 is connected with a suitable coupling 46 to an axially aligned stub shaft 47 rotatably supported in a bearing 48." ('650 patent, col. 6:55-56.) Thus, the structure must include a driving shaft and stub shaft as well, as Defendants propose.

Ultimately, as in part B above, Plaintiffs do not explain what we should make of the lengthy structural discussion contained in the specification. The written description describes a "drive apparatus" over the course of several paragraphs, and it also suggests an alternate embodiment involving an electric servomotor. The drive apparatus is explicitly directed to moving the drive shafts in the particular fashion set forth in the agreed-upon function. Although the drive system "preferably comprises a rotary actuator," I am unable to conclude that a rotary actuator, on its own, would suffice to drive the drive shafts to move the mold plate back and forth. By contrast, the structures proposed by the Defendants are instrumental in driving the drive shafts. Accordingly, I again adopt their proposal.

D. "ram means movable through a forward stroke to transfer food product from the feed chamber through a distribution manifold and into a mold cavity of a mold plate in a fill position" ('650 patent Col. 13:16-18.)

Although the limitation uses the term "means," Plaintiffs dispute that this is a means-plus-function limitation. A claim limitation that "contains the word 'means' and recites a function is presumed to be drafted in means-plus-function format under 35 U.S.C. § 112, ¶ 6." *NetMoneylN, Inc. v. VeriSign, Inc.,* 545 F.3d 1359, 1366 (Fed. Cir. 2008). This presumption can be rebutted,

however, if the claim limitation itself recites sufficient structure to perform the claimed function in its entirety. *TI Grp. Auto. Sys.'s (N. Am.), Inc. v. VDO N. Am., L.L.C.,* 375 F.3d 1126, 1135 (Fed. Cir. 2004). As Plaintiffs note, the term "ram means" at issue here uses "means" in a fashion unlike any of the other numerous means-plus-function limitations in all of the patents-in-suit. Those means-plus-function limitations are delineated at the end of various claims and often use a gerund (verb used as a noun) to explain what the intended function is. For example, as described above, the '650 patent teaches a "means for driving the linear drive shafts to continuously cycle the mold plate in its reciprocal path." ('650 patent, Col. 13:31-32.) The means teaches the function ("means *for* driving") without describing the structure required to achieve that function.

Here, however, the "ram means" is envisioned as a physical object rather than an abstract "means" for doing something. The ram means is not "for" something, it *is* something. Specifically, it is something that is "movable through a forward stroke to transfer food product from the feed chamber." This is made clear by the context in which the limitation is used. Claim 9 begins as follows:

> A drive apparatus for operating a food product molding machine of the type having a pair of alternately operable feed rams disposed to move reciprocally in a feed chamber receiving food product from a supply, said ram means movable through a forward stroke to transfer food product from the feed chamber through a distribution manifold . . . .

(Col. 13:13-18.)

The ram means thus is not a "means" for doing anything but the physical structure anticipated by the term "said" to introduce the limitation. The structure is adequately disclosed. Accordingly, I agree with Plaintiffs that the presumption that this is a means-plus-function limitation has been rebutted.

> The claim limitation at issue recites not only a pumping means, but its structure ("including a nozzle and a venturi tube in alignment with the nozzle"), location ("being located within the reservoir in the region of the opening"), and operation ("the passage of fuel out of the nozzle and through the venturi tube causing fuel to be entrained through the opening into the interior of the reservoir"). While the use of the word "means" gives rise to a presumption that § 112, paragraph 6 applies, the presumption is overcome by the recitation of the structure needed to perform the recited function.

TI Grp. Auto. Sys.'s, 375 F.3d at 1135.

The same holds true here. The claim discloses the structure and the limitation does not explain a particular function that calls out for elaboration through means-plus-function analysis. Accordingly, I agree with the Plaintiffs that the phrase should be given its plain and ordinary meaning.

E. "fill-on control signal" and "fill-off control signal" ('228 patent Claim 1; '650 patent claims 1, 6, 9)

These terms appear in a number of claims at issue here. Claim 1 of the '228 patent, for example, describes an apparatus for operating a food product molding machine, which comprises, among other things, a "means responsive to a fill-on control signal for commencing forward movement of the feed ram device and the feed of a moldable food product to the mold plate cavity." (Col. 12:25-28.) The dispute is one that is common to several of the disputed terms. Specifically, the Defendants argue that the control signal must be generated by an encoder. These are simply signals that indicate that the mold plate is in the correct position to begin or end the fill procedure. The Plaintiffs argue that the signals are electrical signals which actually begin or terminate the forward movement of the feed ram. At the hearing, Defendants conceded that the signal could be an electrical signal, but they pressed their argument that it must be encoder-generated.

Once again, the parties look to the specification for support. The entirety of the most relevant portion reads as follows:

> An encoder 73 is directly connected to the main driving shaft 44 to operate directly in response to reciprocal rotation thereof to generate control signals which are very accurately representative of the mold plate position at and between the fill and discharge positions. These signals may then be utilized to provide accurate timed operation of the feed stroke movement of the rams and the operation of the knock-out device. For example, to enhance cycle speed and efficiency, an encoder signal may be utilized on the return stroke of the mold plate from the discharge to the fill position to generate a fill-on signal as the mold cavities approach the fill slot to reactivate the ram to advance. The ram continues to advance while the mold plate returns to the fill position, is held there for a short dwell period and begins reverse movement towards the discharge position. When the mold plate reaches a selected fill-off position, an encoder signal is processed to deactivate the ram once again. Similarly, encoder signals may be utilized to activate knockouts only when the mold plate is in the discharge position.

('228 patent, Col. 9:15-33.)

The Defendants cite certain phrases above that in their view mean the signal is encoder-generated. For example, the specification provides that "an encoder signal may be utilized on the return stroke of the mold plate from the discharge to the fill position to generate a fill-on signal." In their view, this suggests that the encoder signal is what is driving, or "generating" the fill-on signal. In addition, the specification teaches that "[w]hen the mold plate reaches a selected fill-off position, an encoder signal is processed to deactivate the ram once again." Again, this suggests to the Defendants that the encoder signal is what deactivates the ram.

In my view, however, Plaintiffs are correct that phrases such as this do not suffice to limit the claim terms. In the first phrase Defendants cite, the "encoder signal may be *utilized* . . . to *generate* a fill-on signal." This means that while an encoder signal is used to generate a fill-on signal, it does not generate the signal itself. The second phrase quoted above teaches that "an

encoder signal is processed." The processing is done by a microprocessor. Plaintiffs concede that the encoder signal is a key part of the process by informing the processor of the position of the mold plate. But the information about mold plate position does not, by itself, commence the forward movement of the feed ram device. Instead, it is only when such information is processed by the microprocessor than an electric signal is sent to create motion. (This is how the encoder signal is "used" to generate the fill-on signal.)

During argument, Plaintiffs' counsel compared the device to a quarterback. The quarterback's eyes give him information about the positions of various offensive and defensive players, but when he runs or throws the ball, it is not his eyes that control that activity but different volitional forces in the quarterback's arms, legs, etc. The decision to throw the ball in a particular direction is made with input from the information about player locations, but that input does not "generate" the decision. In sum, while the encoder signal is a key part of the process (and is "utilized" in that process), it is not true that the encoder itself generates the fill-on or fill-off control signals. Accordingly, I adopt the Plaintiffs' proposed definition.

F. "discharge position signal" ('228 patent claim 1; '650 patent claims 1,6,9) and "fill position signal" ('228 patent claim 4).

The dispute over these terms largely echoes the analysis set forth above. Defendants believe the terms should be construed as encoder-generated signals "used to indicate that the mold plate is in the correct position for the patties to be" either knocked out or filled. Plaintiffs propose that the signals are electrical signals that signal the mold plate drive shafts to hold the mold plate in either a discharge or fill position for a particular dwell time.

For the reasons given in part E, above, I conclude that the signals are not "encoder-

generated" signals. The portions of the specification quoted by the Defendants do not support their position. In particular, those sections reiterate that encoder signals are "processed," and this processing is what signals the drive shafts to hold the mold plate in a discharge or fill position. Accordingly, I adopt the Plaintiffs' proposed construction.

G. "end of a ram feed stroke signal" ('228 patent claim 5, '650 patent claim 13)

Claim 5 of the '228 patent provides for the apparatus described in Claim 1 "wherein said fee ram device comprises a pair of alternately operable feed rams, and including: means responsive to an **end of a ram feed stroke signal** for reversing one of said rams and for commencing the feed stroke of the other of said rams . . ." (Col. 12:43-47.) Claim 5 of the '650 patent describes a "pair of alternately operable feed rams, each ram adapted to move through one forward stroke over multiple mold plate cycles and to return in a reverse stroke in response to an **end of stroke signal**, said end of stroke signal operable to cause initial movement of the other ram through a forward stroke . . ." (Col. 12:41-46.) Plaintiffs propose that this limitation should be construed as an electrical signal that signals the ram cylinder to return to its initial position and signals the other ram cylinder to begin its stroke. Defendants argue that it is merely a signal indicating that the feed ram has reached the end of its stroke.

It is clear from the claim terms themselves that the signal is not merely positional. The signal does not merely indicate that the feed ram has reached the end of its stroke. Instead, the claims cited above have *purpose*: by their own terms, they reverse one of the rams and commence the stroke of the other, or they "cause initial movement of the other ram." As such, I will adopt the Plaintiffs' proposed construction.

H. "means for monitoring the mold plate position over the full cycle of mold plate movement and for generating control signals representative of mold plate position" ('650 patent claim 9)

The parties agree that this is a means-plus-function limitation. Plaintiffs propose that the function is (i) to monitor the mold plate position over the full cycle of mold plate movement and (ii) to generate control signals representative of mold plate position. The structure they propose is a device which transforms information relating to the position of the mold plate into electrical signals that are representative of such position, and any structural equivalents. Defendants contend that the function is to very accurately represent the position of the mold plate, and the structure is an encoder providing signals directly connected to a main driving shaft.

First, I am satisfied that Defendants' effort to require the structure to be directly connected to a main driving shaft is not persuasive. It is true that that structure is the only one suggested in the specification. Plaintiffs note that another part of the description suggests an encoder "directly linked to the output of the rotary actuator" rather than the driving shaft. (Col. 2:16-17.) But the output of the rotary actuator *is* the driving shaft, at least in the preferred embodiment. (Col. 2:39-40.) As such, the phrase Plaintiffs cite suggests that the encoder is in fact directly connected to the driving shaft, as Defendants propose.

The Defendants' proposed construction fails, however, because they have not shown why that particular structure is essential to carrying out the applicable function, which is to monitor the mold plate position. That is, there is nothing about being "directly connected" to the drive shaft that allows the encoder to perform its essential positional monitoring function. Accordingly, I conclude that it would be improper to limit the claim term in the fashion they propose.

The same holds true for their proposal that the applicable function is to "very accurately" represent the position of the mold plate. The phrase arises out of the specification, of course, but elsewhere the specification uses different terminology. Naturally the goal is to measure the position of the mold plate as accurately as possible, but the claim language itself merely states that the function is to monitor the plate's position. Limiting the claim to monitoring the position "very accurately" would improperly read into the claims a vague and unsupported limitation.

Both sides appear to agree that the structure requires an encoder. Defendants propose using the term "encoder" itself, while Plaintiffs state that their more expansive proposed language is how one skilled in the art would understand the term encoder. If Plaintiffs' proposed language ("a device which transforms information relating to the position of the mold plate into electrical signals that are representative of such position") is truly just another way of saying "encoder," then I do not see any benefit from using the more cumbersome language. The term "encoder" is ubiquitous throughout the patents in suit, and no one has disputed that the structure requires an encoder. Accordingly, I conclude that the function is as Plaintiffs propose, but the structure is an encoder.

I. "delay means for holding a response of the other of said rams to said end of ram feed stroke signal until a generation of a next fill-off signal" ('228 patent claim 5, '650 patent claim 13)

Again, both sides agree that this is a means-plus-function limitation. In Plaintiffs' view, the function is to hold a response of one of the ram cylinders to an end of ram feed stroke signal (as defined above) until the generation of a next fill-off signal. The required structure is a processor / computer and any equivalents. Defendants argue that the function is delaying the processing of a signal indicating that a first ram is at the end of its stroke until an encoder-generated signal indicates that the mold plate is in a position to end the fill procedure. The required structure is a

programmable controller.

Plaintiffs' proposed function tracks the claim language closely. Defendants' incorporates a proposed construction of "end of ram feed stroke" that I rejected above. It also requires an encoder-generated signal, which I also rejected earlier. As for the structure they propose (a programmable controller), Defendants cite the specification. "With the use of a programmable controller in the microprocessor 76, it is possible to establish parameters for optimum molding of a particular food product based on its known content, supply temperature . . . and to program the optimum fill-on, fill dwell, and fill-off times in the microprocessor controller." ('228 patent col. 10:50-55.) From this, they argue that the only structure disclosed in the specification that can perform the required function is a programmable controller.

Plaintiffs note that the language quoted above indicates a programmable controller *in* the microprocessor. That is, it is part of the microprocessor itself. Because the microprocessor includes the programmable controller, there is no reason to limit the claim further. Put another way, there is no support in the specification for the idea that the required structure is merely a programmable controller that could exist *outside* of a microprocessor. The portions of the specification cited by the Defendants described only the "programmable controller in the microprocessor" and the "microprocessor controller." (*Id.*) Accordingly, I will adopt the Plaintiffs' proposed construction, which more closely tracks the claim language.

J. "means responsive to a fill-on control signal for commencing forward movement of the feed ram device and the feed of a moldable food product to the mold plate cavity" ('228 patent claim 1, '650 patent claim 9)

The parties agree that this is a means-plus-function limitation and that the function is the

"commencing of forward movement of the feed ram in response to a fill-on control signal and therefore beginning to force the food product into the mold plate cavity." The dispute, which is echoed in other contested claims (below), is over the structure. Plaintiffs propose that the corresponding structure is a ram cylinder. Defendants argue that the structure is bipartite: a ram that is rectangular in cross-section, and three vertically driven feed augurs.

Plaintiffs argue that the ram cylinder is all that is required to perform the function of commencing the forward movement of the feed ram. The specification teaches that "[e]ach of the rams 17 is independently driven by a hydraulically driven ram cylinder 31 mounted on the upper frame members 13 below the supply hopper 14." ('228 patent col. 5:53-55.) And the description of figure 1 further indicates that the ram cylinder is all that is required: "encoder signals can then be processed by the microprocessor 76 to, for example, actuate the ram cylinder 31 at any selected position of the mold plate in the return stroke, set the dwell time of the mold plate in the fill position, shutoff the cylinder and associated feed ram 17 at any selected position . . ." (Col. 9:63-67.) Plaintiffs also argue that it would be improper to include the feed ram itself in the structure, as Defendants do, because the function of the structure is to *move* the feed ram. The ram is what is being moved, and thus it is not itself part of that instrumentality. Finally, they note that the "shape" of a ram – rectangular versus circular – is not necessarily its structure. Structure is a broader concept that encompasses the mechanisms and features needed to accomplish the given function, and here there is no function served by use of one shape ram versus another. Anyone skilled in the art would recognize that there is no advantage taught by the use of a rectangular ram.

Defendants focus not so much on the function of commencing movement of the feed ram but on forcing food product into the mold cavities. They rely on a different part of the specification

in support of their proposed construction:

> the feed rams 17 operate alternately, as shown in the drawings, but are fed by the common feed hopper 16. The hopper includes three vertically driven feed augers 30 which . . . are driven by separate motors 29 and operated in pairs to deliver food product to the feed chambers.

(Col. 5:44-49.)

This section demonstrates, Defendants argue, that the feed augurs, in conjunction with the feed arms, deliver the food product into the mold cavities, thus accomplishing the agreed function of "commencing of forward movement of the feed ram in response to a fill-on control signal and therefore beginning to force the food product into the mold plate cavity." But although the section cited by Defendants describes the delivery of food product to the feed chambers by the three feed augurs, that section does not suggest that these augurs commence the movement of the feed ram itself or the forcing of food product into the mold cavities. In addition, I agree with Plaintiffs that the feed ram is not itself part of the structure that commences movement of the feed ram. Accordingly, I adopt Plaintiffs' proposed construction for this limitation as well as the similar means-plus-function limitations for terminating forward movement of the feed ram and reversing one of the rams and commencing the feed stroke of the other.

K. "selectively variable discharge dwell time" ('228 patent claim 1, '650 patent claim 9)

This limitation arises as part of a "means responsive to a discharge position signal for holding the mold plate for a selectively variable discharge dwell time." ('228 patent, col. 12:32-34.) The parties' dispute centers on the meaning of "selectively variable." Plaintiffs argue that the term should mean "adjustable," while Defendants believe it should mean "programmatically adjustable."

Defendants argue that the patents provide that the dwell time is variable or adjustable only

through use of a programmable controller. The specification instructs as follows:

> With the use of a programmable controller in the microprocessor 76, it is possible to establish parameters . . . and to program the optimum fill-on, fill dwell, and fill-off times in the microprocessor controller. The machine may then be operated at any desired speed by appropriate adjustment of the discharge dwell time . . .

('228 patent, col. 10:50-58.)

> encoder signals can then be processed by the microprocessor 76 to, for example, actuate the ram cylinder 31 at any selected position of the mold plate in the return stroke, set the dwell time of the mold plate in the fill position . . .

('228 patent, col. 9:63-66.)

Plaintiffs agree that a programmatic controller is the corresponding structure used to selectively vary the mold plate dwell times. But this not a means-plus-function limitation where we need to refer to the specification to discern the appropriate structure and meaning of the term. Instead, the claim term "selectively variable" stands on its own. Although imposing limitations on claim terms is possible when the inventor specifically disclaims a given concept, that is not the case here. "[C]laim terms take on their ordinary and accustomed meanings unless the patentee demonstrated an intent to deviate from the ordinary and accustomed meaning of a claim term by redefining the term or by characterizing the invention in the intrinsic record using words or expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope." *Teleflex, Inc. v. Ficosa North America Corp.,* 299 F.3d 1313, 1324 (Fed. Cir. 2002). Although the specification describes the use of a programmatic controller, there is no indication that the term "selectively variable" itself was intended to have a special meaning discernable only by reference to the specification. *Id.* (rejecting argument that claim terms should be limited to the embodiment disclosed when specification describes only one embodiment). The specification does suggest that

the one novel aspect of the invention allows the user to "eliminate the need to utilize complex hydromechanical lost motion devices typical of the prior art," ('650 patent, col. 8: 46-47) that is not a basis upon which to insert the term "programmatically" into the claim terms. It is possible that the drafter has specifically disavowed coverage for any "complex hydromechanical lost motion devices," but it does not follow that the Defendants' proposed language should be adopted. Instead, as Plaintiffs note, the key novelty arising out of the disputed limitation is that the variability of the dwell time is "selective" or independent of the rest of the machine. Unlike prior art machines, dwell times can now be altered independently, and the specification explains why that would be useful. ('228 patent, col. 10:37-59.) Thus, there is no "clear disavowal" here that would support rewriting the claim terms as the Defendants propose. Instead, the phrase "selectively variable" suggests only that something is variable or adjustable based on a selection or choice. For this reason, I adopt the Plaintiffs' proposal for this limitation as well as for the similar "varying the time of the full cycle of mold plate movement by adjusting the discharge dwell time" limitation found in claim 6 of the '650 patent.

L. "means for adjusting the discharge dwell time in response to a change in fill dwell time to maintain a constant mold plate cycle time" ('228 patent claim 6, '650 patent claim 14)

The parties agree that this is a means-plus-function limitation but disagree about the function and corresponding structure. Plaintiffs argue that the function is to adjust the discharge dwell time in response to a change in fill dwell time to maintain a constant mold plate cycle time, and the requisite structure is a processor/computer and any equivalents. Defendants again argue that the function is "programmatically changing" the time the mold plate is held in the discharge position, and the corresponding structure is a programmable controller.

Construction of these terms is anticipated and governed by my discussion above. As just noted in section K, I do not find any basis for construing the term "adjusting" to mean "programmatically changing." And I concluded in section I that although there was in fact a programmable controller, that controller was *in* a microprocessor. Accordingly, I adopt Plaintiffs' proposed construction.

M. "means responsive to a discharge position signal for holding the mold plate for a selectively variable discharge dwell time" ('228 patent claim 1, '650 patent claim 9)

The parties agree this is a means-plus-function limitation whose function is "holding the mold plate stationary in response to a discharge position signal for a period of time." Their dispute once again echoes arguments made and addressed earlier. Defendants argue that the corresponding structure involves a motor, main driving shaft, stub shafts, drive arms, or (alternatively) a servomotor, operating pinions directly moving linear racks. In other words, it is the same structure that drives the drive shafts and the plate shuttle, as discussed in parts B and C above. Plaintiffs argue instead that the only structure required to hold the mold plate stationary is a pair of laterally spaced linear drive shafts.

I concluded above in sections B and C that the structures proposed by the Defendants were required to drive the plate shuttle and drive shafts. This limitation presents a closer call, however. The other clauses involved the *driving* of parts of the machine, and partly for that reason I concluded that the bare structures described by the Plaintiffs did not suffice. Here, we are faced with a limitation that it substantially more passive. It merely "holds" the mold plate. As Plaintiffs note, if we are asked which part of the body performs the function of holding a hamburger, we would say the hands and not the wrists, arms, shoulders, etc. Because the function at issue here is essentially

passive, the additional structures described by the Defendants do not seem as necessary, at least upon first blush.

But Defendants note that the agreed function is not merely to hold the mold plate – it is to hold it stationary in response to a discharge position signal for a period of time. Drive shafts, on their own, cannot respond to signals or hold mold plates for given periods of time. They could certainly "hold" a mold plate, but to do so in response to a signal or for specified times is beyond their abilities. As Defendants note, by requiring that the holding be "for a period of time," the limitation envisions motion before and after the holding time. This requires the structure they propose in order to move the mold plate, hold it, and then move it again. Plaintiffs' proposal again only requires two drive shafts, which cannot accomplish the agreed function.

I agree with Defendants and therefore adopt their proposed construction for this limitation as well as for the similar limitation for a "means responsive to a fill position signal for holding the mold plate in the fill position for a selectively variable fill dwell time." ('228 patent claim 4, '650 patent claim 12).

III. '111 Disputed Terms

The '111 patent describes a food processing machine with increased mold plate fill area and stroke.

A. "fill length" (claims 19 and 30)

Plaintiffs argue that the inventor specifically defined this term in the specification and, as such, this Court should adopt that definition rather than one based on a more general and common understanding. To be his own lexicographer, a patentee must use a "special definition of the term [that] is clearly stated in the patent specification or file history." *Vitronics Corp. v. Conceptronic,*

Inc., 90 F.3d 1576, 1580 (Fed. Cir.1996). "[T]he claim term will not receive its ordinary meaning if the patentee acted as his own lexicographer and clearly set forth a definition of the disputed claim term in either the specification or prosecution history." *CCS Fitness, Inc. v. Brunswick Corp*., 288 F.3d 1359, 1366 (Fed. Cir. 2002). However, courts employ a presumption that the plain and ordinary meaning should be ascribed to a claim term and will find that presumption overcome only if the drafter's intent to use a special definition is clear.

Here, the specification makes clear that "fill length" has a special meaning:

> the increased fill area is a direct function of an increased fill length L. The fill length L is defined as the maximum longitudinal length of the mold plate that can contain cavities 51. That is, the fill length is the maximum distance between the leading edges 89 of the cavities in the front row 51A and the trailing edges 91 in the cavities in the back row 51C.

(Col. 6:6-12.)

Defendants argue, however, that the claims themselves define "fill length" and that reference to the specification is unnecessary. For example, claim 1 describes a "mold plate having a fill length between a leading edge and the trailing edge of said at least one cavity that is approximately 8.50 inches." Plaintiffs concede that the term "fill length" is used differently in claim 1, and that difference is rendered obvious by the fact that claim 1 uses modifying terms to define the fill length ("a fill length between a leading edge and the trailing edge . . .") In contrast, in claims 19 and 30 the term "fill length" is used without any modifying language, which indicates that it is being used differently and carries the special meaning defined in the specification. In fact, if the Defendants' proposed definition were correct ("distance between the leading edge and the trailing edge of a mold plate cavity") then there would have been no reason, in claim 1, to use nearly identical language. "Claim 1 recites a 'spring metal adaptor being less than a complete circle,' while claim 8 omits the

less than a complete circle modifier. . . .This difference indicates that, unlike the adaptor of claim 1, the spring metal adaptor of claim 8 can be either a complete circle or an incomplete circle." *Arlington Industries, Inc. v. Bridgeport Fittings, Inc.,* 632 F.3d 1246, 1254 (Fed. Cir. 2011).

In sum, I am satisfied that the specification explicitly defines the term "fill length." The term is not used casually but is key to one of the invention's points of novelty. As the specification makes clear, "it is an important feature of the invention that the tooling 81 gives an increased fill area of the mold plate 17 compared with the tooling of the prior machine. . . . an increased mold plate fill area is a direct function of an increased fill length L." (Col. 5:66 - 6:7.) It then proceeds to define "fill length L," as set forth above. Nothing about the term's different use in claim 1 suggests that the special definition contained in the specification should not be applied in claims 19 and 30.

B. "mold plate having a fill length between a leading edge and a trailing edge of said at least one cavity that is at least approximately 8.50 inches" (Claim 1)

I construed the first part of this language immediately above. Defendants contend that the phrase "at least approximately 8.50 inches" should mean "at least 8.55 inches." Plaintiffs believe the phrase is plain as written.

I conclude that there is no basis to rewrite the term to mean "at least 8.55 inches." Defendants concede that the term "approximately" allows for some wiggle room, but they argue that by using 8.5<u>0</u> instead of 8.5, the drafter intended to be accurate into the hundredths, i.e., the second place beyond the decimal point. But even if that were true, it would not provide a basis for equating 8.50 with 8.55. The number 8.45 is equally close to 8.50. Had the drafter intended otherwise, he could easily have eliminated the awkward "approximately" modifier and simply said "at least 8.55."

By using the construct he did, however, the drafter indicated that the length must be at least about 8.50. No one would argue that such a clause is a model of clarity, but it conveys the straightforward idea that a given length must be a minimum of about 8.5 inches. A length of 8.53 might fit that bill, but so might 8.48. Accordingly, I will give the phrase its plain meaning rather than construe it.

C. "means for reciprocating the mold plate in longitudinal directions" (claims 1 and 19)

Both sides agree that this is a means-plus-function limitation and that the function is moving the mold plate back and forth. Plaintiffs argue that the corresponding structure is a rotating drive mechanism, which reciprocates the mold plate with a stroke length greater than nine inches, and any equivalents. They argue that the specification teaches that "to reciprocate the mold plate, the food processing machine further comprises the drive mechanism." (Col. 4:19-20.) It further identifies a drive mechanism as one of the necessary structures: "a drive mechanism 23 is a necessary part of the machine 1, because the drive mechanism 23 reciprocates the mold plate 17 with an increased stroke relative to the prior Formax machine. The increased stroke cooperates with the changed tooling to enable the mold plate to have the increased fill length L." (Col. 6:49-54.)

The Defendants argue that it is not enough to say the structure requires a "drive mechanism." Naturally, a drive mechanism is required, but here the specification discloses the particular components of that mechanism. The Defendants argue that the requisite structure includes a motor and a gear reducer rotating a crank arm, which is connected to a lost motion cylinder, the cylinder being connected to one arm of a lever where the second arm of the lever is pinned to a link that is also pinned to a slide plate which is hinged to the mold plate. Plaintiffs concede that these features are in fact described in the specification, but they arise only in the description of the preferred embodiment. (Col. 4:21-30; Col. 6:55 - Col 7:8.) Plaintiffs note that "particular embodiments

appearing in a specification will not be read into the claims when the claim language is broader than such embodiments." *Electro Med. Sys. S.A. v. Cooper Life Sci.,* 34 F.3d 1048, 1054 (Fed. Cir. 1994). Although that is generally true, this is a means-plus-function limitation, meaning that we necessarily have to look to the specification to determine the structure that corresponds to the function. The corresponding structure may be *broader* than that disclosed in the preferred embodiment, meaning that the structure disclosed in the preferred embodiment will not always limit the claim term, particularly if other structures are also disclosed (as above in parts B and C). "Identification of corresponding structure may embrace more than the preferred embodiment. A means-plus-function claim encompasses all structure in the specification corresponding to that element and equivalent structures." *Micro Chemical, Inc. v. Great Plains Chemical Co., Inc.,* 194 F.3d 1250, 1258 (Fed. Cir. 1999). In *Micro Chemical,* the district court erred by limiting the disputed term to the structure disclosed in the preferred embodiment.

Thus, in a typical case the defendant will try to limit a structure to one disclosed in the preferred embodiment (as in *Micro Chemical*) while ignoring other possible structures disclosed in the patent. Here, by contrast, we have almost the opposite scenario. The Defendants are not trying to say that the structure is the preferred embodiment and *only* that; they are arguing that the structure is *at least* that structure. In contrast, Plaintiffs deny that the correct construction even includes the preferred embodiment. They have not cited any cases suggesting that a patentee can disclose a specific structure in a preferred embodiment and then ignore that structure when it is time to construe the claims. One cannot describe a structure as the preferred embodiment of his invention and then complain that an alleged infringer believes that the disclosed structure is actually part of the invention. "Although patentees are not necessarily limited to their preferred embodiment,

interpretation of a means-plus-function element requires this court to consult the structure disclosed in the specification, which often, as in this case, describes little more than the preferred embodiment." *Signtech USA, Ltd. v. Vutek, Inc.,* 174 F.3d 1352, 1356 (Fed. Cir. 1999). In sum, the structure disclosed in the preferred embodiment is the drive mechanism that moves the mold plate back and forth. Accordingly, I adopt Defendants' proposed construction.

IV. '789 Patent

A. "wherein the controller stops said mold plate at small increments relative to a position of said fill position" (claim 1)

Plaintiffs believe the plain and ordinary meaning should apply, while Defendants argue that it should mean the controller stops the mold plate at regular consecutive steps from the fill position. For support, Defendants look to the back-and-forth between the patent office and the applicant during the prosecution history. The PTO originally rejected the application on the grounds that the claims of the '789 patent were disclosed by the '228 patent. After two rejections, the applicant amended language to read that the controller "stops said mold plate at small increments relative to a position of said fill position" (the present claim language). Defendants argue that this history demonstrates that the invention claimed in the '789 patent *must* involve stopping the mold plate at small increments; they further argue that accepting the Plaintiffs' belief that the plain and ordinary meaning of the claim terms should apply would improperly broaden the scope of the claims because a mere *slowing down* of the mold plate would infringe.

I am not persuaded that "slowing down" the mold plate would constitute infringement of a claim that explicitly states that the controller *stops* the mold plate at small increments. The Plaintiffs are not trying to run away from the prosecution history – they are simply asking that the

very phrase they added during that history be given its customary and plain interpretation. The Defendants' effort to add further limitations ("the controller stops the mold plate at regular consecutive steps") does not find support in the prosecution history or the description. Although the specification describes features involving indexing or stepping the cavities of the mold plate, this is merely one embodiment. The section Defendants rely upon begins "[t]he controller 67 can also operate the drive assembly 60 to index or step the mold plate . . ." (Col. 4:39-40.) This does not mean the controller *must* stop the mold plate at "indexed" or "stepped" increments, much less the "regular consecutive steps" Defendants propose. Accordingly, I will give the claim its ordinary meaning.

B. "and determines a compaction and uniformity of said food product in said cavities" (claim 1)

Again, Plaintiffs believe the plain and ordinary meaning should apply, while Defendants argue that instead of "determines," the phrase means "measures." Defendants do not cite any part of the patent or prosecution history to support the rewriting of this claim, however. They suggest that qualities like compaction or uniformity are necessarily "measured" if they are "determined," but if that is true then it means there is little reason to swap one term for the other. Claim construction is not an invitation to substitute synonyms. Moreover, I am not convinced that the two terms are even synonymous. A device could determine whether a product was suitably uniform without necessarily *measuring* the uniformity. A bar at the entrance to a roller coaster might forbid anyone shorter than 60 inches from entry, and individuals could compare themselves to the bar to see if they were tall enough. That bar could *determine* height even though it did not specifically *measure* one's height. The would-be rider simply knows whether or not he qualifies, not how tall

he is. This is not to say that the '789 invention is similar, but merely to observe that the two terms are not necessarily synonymous. I will give the term its plain and ordinary meaning.

Dated this 7th day of June, 2011.

/s William C. Griesbach
William C. Griesbach
United States District Judge